CLAIMS

1. A method for softlimiting a signal comprising:

searching for at least one peak above a threshold within a first window created from a set of samples of the signal; and

adding a threshold correcting signal to the at least one peak found by the step of searching for at least one peak.

2. The method of Claim 1, wherein the found at least one peak comprises the highest peak within the window.

3. The method of Claim 2, wherein the signal is a composite signal comprising more than one carrier frequency, and further comprising:

examining the composite signal after adding the threshold-correcting signal to the found highest peak to determine if at least another found peak within the first window has been reduced below the threshold and/or at least one unwanted oscillation has not been introduced into the composite signal by the threshold-correcting signal.

4. The method of Claim 3, wherein the step of examining the composite signal comprises:

if the at least another peak has not been reduced below the threshold and/or the at least one unwanted oscillation has been introduced into the composite signal by the threshold correcting signal,

searching for the at least another peak within the first window of samples created; and

adding another threshold correcting signal to the at least another peak found by the step of searching for the at least another peak.

5. The method of Claim 3, further comprising:

continuing to search for more peaks within the first window, correspondingly adding threshold correcting signals for each of the more peaks found and examining the composite signal until the samples within the first window are below the threshold.

6. The method of Claim 3, further comprising:

searching for at least one additional highest peak above the threshold within a second window created from the set of samples created;

adding an additional threshold correcting signal to the at least one additional highest peak found by the step of searching for at least one additional highest peak; and

examining the composite signal again after adding the additional threshold correcting signal to the at least one additional found highest peak to determine if at least another additional found peak within the second window has been reduced below the threshold and/or at least one unwanted oscillation has not been introduced into the composite signal by the additional threshold correcting signal.

7. The method of Claim 6, wherein the step of examining the composite signal again after adding the additional threshold-correcting signal comprises:

if the at least another additional peak has not been reduced below the threshold and/or the at least one unwanted oscillation has been introduced into the composite signal by the additional threshold correcting signal,

searching for the at least another additional peak within the second window of samples created; and

adding another additional threshold correcting signal to the at least another additional peak found by the step of searching for the at least another additional peak.

8. The method of Claim 7, further comprising:

continuing to search for more additional peaks within the second window, correspondingly adding threshold-correcting signals for each of the more additional peaks found and examining the composite signal until the samples within the second window are below the threshold.

9. A system comprising:

an amplifier for amplifying a signal; and

a peak compensating device comprising:

a peak search detector for detecting the presence of at least a highest peak above a threshold within a window of samples; and

a clipping filter for generating a threshold-compensating signal in response to detecting the presence of at least a highest peak.

10. The system of Claim 9, wherein the signal is a composite signal comprising more than one carrier frequency, and further comprising:

a delay device for time aligning the threshold compensating signal relative to the at least a highest peak; and

a summing device for summing the threshold-compensating signal with the composite signal.

11. The system of Claim 9, wherein the peak compensating device comprises:

a clipping factor calculator for calculating a magnitude and a polarity of the threshold compensating signal for the clipping filter; and

a multiplier for multiplying the at least a highest peak with the calculated magnitude and polarity.

12. The system of Claim 10, wherein the clipping filter comprises at least one carrier filter for obtaining a sum of finite impulse responses for each carrier frequency of the composite signal.

13. The system of Claim 10, wherein the clipping filter comprises one carrier filter for each carrier frequency of the composite signal, at least one of the carrier filters being weighted differently than the remaining carrier filters to control the in-band correction signal power.

14. The system of Claim 13, wherein the weighting of the at least one of the carrier filter for the different carriers causes the in-band correction signal power to be distinct for each carrier frequency.

15. The system of Claim 9, wherein the window of samples comprise at least one of I and Q information.

16. A method for clipping peaks of a composite signal, the method comprising:

searching for a first highest peak above a threshold within a first window created from a set of samples of the signal;

calculating a magnitude and polarity of a threshold-correcting signal for the first highest peak;

examining the characteristics of the composite signal if the threshold correcting signal is added to the first highest peak; and

adding the threshold-correcting signal with the first window of samples at the position of the first highest peak found by the step of searching for a first highest peak.

17. The method of Claim 16, wherein the step of adding the threshold correcting signal is performed if at least one of the following are determined by the step of examining the characteristics of the composite signal:

another peak within the window has been reduced below the threshold; and

at least one unwanted oscillation has not been introduced into the composite signal by the threshold-correcting signal.

18. The method of Claim 17, further comprising:

searching for a second highest peak above the threshold within a second window created from the set of samples;

calculating a second magnitude and a second polarity of the second threshold-correcting signal for the second highest peak;

examining the characteristics of the composite signal if the second threshold correcting signal is added to the second highest peak found within the second window; and

adding the second threshold correcting signal to the second highest peak found by the step of searching for a second highest peak within the second window; and

examining the composite signal again after adding the second threshold-correcting signal to the second highest peak.

19. The method of Claim 18, the step of examining the composite signal again after adding the second threshold-correcting signal comprises:

if at least another additional found peak within the second window has not been reduced below the threshold and/or at least one unwanted oscillation has been introduced into the composite signal by the second threshold correcting signal,

searching for the at least another peak within the second window of samples created; and

adding another threshold correcting signal to the at least another additional peak found by the step of searching for the at least another additional peak.

20. The method of Claim 19, further comprising:

continuing to search for more peaks within the at least one of the first and the second windows, correspondingly adding more threshold correcting signals for each of the more peaks found and examining the composite signal until the samples within the at least one of the first and the second windows are below the threshold.